Online Peer-to-Peer Lending

Bachmann, Alexander; Becker, Alexander; Bürckner, Daniel; Hilker, Michel; Kock, Frank; Lehmann, Mark; Tiburtius, Phillip; Funk, Burkhardt

Published in:
Journal of Internet Banking and Commerce

Publication date:
2011

Document Version
Publisher's PDF, also known as Version of record

Journal of Internet Banking and Commerce

An open access Internet journal (http://www.arraydev.com/commerce/jibc/)

Journal of Internet Banking and Commerce, August 2011, vol. 16, no.2
(http://www.arraydev.com/commerce/jibc/)

Online Peer-to-Peer Lending – A Literature Review

ALEXANDER BACHMANN (*Alexander.Bachmann@stud.leuphana.de*),
ALEXANDER BECKER (*Alexander.Becker@stud.leuphana.de*),
DANIEL BÜRCKNER (*Daniel.Buerckner@stud.leuphana.de*),
MICHEL HILKER (*Michel.b.Hilker@stud.leuphana.de*),
FRANK KOCK (*Frank.Kock@stud.leuphana.de*),
MARK LEHMANN (*Mark.Lehmann@stud.leuphana.de*)
PHILLIP TIBURTIUS (*phillip.tiburtius@uni.leuphana.de*)

All authors mentioned above are graduate students at the Leuphana University in Lüneburg, Germany, in the field Management and Entrepreneurship.

BURKHARDT FUNK, PhD
Full Professor, Leuphana University, Lüneburg, Germany
Postal Address: **Scharnhorststraße 1, 21335 Lüneburg, Germany**
Email: ***funk@uni.leuphana.de***

Burkhardt Funk is a full professor in the field of information systems. His research interests cover a wide range of topics, e.g. decision making in the context of E-Commerce scenarios and the integration of ERP systems and Environmental Management Information Systems. As a member of the presidential board of the university he is responsible for the overall IT strategy of the Leuphana University. He has founded several companies and consulted major European Enterprises.

Abstract

The term online peer-to-peer lending (P2P) describes the loan origination process between private individuals on online platforms were financial institutions operate only as intermediates required by law. Initialized by groups in online social networks, first commercial online P2P lending platforms started in 2005. Thus online P2P lending is a relatively young research field. This paper gives a brief overview of the P2P lending market and reviews the research on the determinants of P2P lending. We distinguish between financial and demographic characteristics of the borrower, as well as social characteristics like friends and group affiliation. The reviewed literature gives insights on how the determinants affect the borrowers' likelihood of successful funding, the final interest rate that has to be paid as well as the relationship of the borrowers' characteristics and lending success.

Keywords: **Peer-to-Peer Lending; Literature Review; Determinants of Funding Success; Financial Characteristics; Demographic Characteristics; Group Intermediation;**

INTRODUCTION

With the upcoming popularity of online communities in the past decade a new way of loan origination has entered the credit market: online peer-to-peer (P2P) lending. It transfers the old idea of personal credits into the World Wide Web. In this kind of lending model the mediation of financial institutions is not required (Herzenstein et al., 2008; Galloway, 2009). The decision process of loan origination is given into the hand of private lenders and borrowers, and websites like Prosper.com offer them a platform to engage with each other. Within these platforms borrowers generally describe the purpose of their loan request and provide information about their current financial situation, like income or open credit lines. Lenders then have the opportunity to offer a loan with an interest rate derived upon this information. For borrowers, online P2P lending is a way to receive a loan without a financial institution involved in the decision process and might also be a possibility to receive better conditions than in the traditional banking system. For lenders it can be seen as an investment model where the investment risk is coupled to the credit rating of the funded loans. The platforms themselves often benefit by raising fees for successful realized transactions (Galloway, 2009).

Although online P2P lending is a relatively young field of research an increasing amount of scientific contributions has been published in recent years (Iyer, Khwaja, Luttmer, & Shue, 2009; Pope & Sydnor, 2008; Ravina, 2007). With the emergence of the first online P2P lending platform “Zopa” the new lending model raised attention for the first time in the year 2006 (Hulme & Wright, 2006). However it was Prosper.com, who caused a wave of scientific contributions by making the entire platform’s data public in 2007. Since then, the topic has attracted researchers from the fields of economics, information technology and social sciences to investigate the relationships between lenders and borrowers in online P2P lending platforms.

Following this emergent research area, we saw the need for a comprehensive literature-review that gives an overview of the current state of scientific research in P2P lending. It is our goal to integrate different representative research contributions and provide a synopsis of the determinants in P2P-lending. Our main target groups are readers from the information system and financial management communities.

After describing the paper selection approach a short overview of the online P2P lending market and its stakeholders is given. The main part of this review covers the determinants in P2P lending. We divide them into financial characteristics, also called hard-factors, and soft-factors like demographic characteristics and group intermediation. We conclude with ideas for future research in online P2P lending.

PAPER SELECTION

In the summer of 2010 we conducted a keyword-search in Google Scholar with the terms “P2P Lending” and “Peer-to-Peer Lending” and included further articles through backward- and forward search. Since the topic is young and most journals and conferences open their databases for search engines like Google Scholar, we concluded that any search bias would be limited and therefore refrained from a journal search.

We found 43 papers from the years 2006 to the end of 2010. While reviewing the papers we took a neutral perspective, meaning that we evaluated the paper's relevance without espousing a certain scientific position. Those articles we felt were representative for a particular research direction in online P2P lending were included in the review (Webster & Watson, 2002). When we compared the research results concerning determinants of lending success we focused on profit oriented online P2P lending platforms, where lenders raise interests for loans they provide, and the platforms create revenues by charging service fees. We left out non-commercial or charity driven platforms, like Kiva.org, since we believe that the behavior of lenders and borrowers in such environments is different than in P2P lending with commercial background.

Table 1: Publications covered in the review.

Year	Amount	References
2006	1	Hulme & Wright, 2006
2007	6	Kumar, 2007; M. Greiner & Wang, 2007; Meyer, 2007; Heng et al., 2007; Ravina, 2007; Rumiany, 2007
2008	13	Chen et al., 2008; Freedman & G. Z. v Jin, 2008; Theseira, 2008; Klein, 2008; Herrero-Lopez et al., 2008; Dhand et al., 2008; Frerichs & Schumann, 2008; Klafft, 2008; S. R. Garman, R. C. Hampshire, et al., 2008; S. Garman, R. Hampshire, et al., 2008; Herzenstein et al., 2008; Freedman & G. Z. Jin, 2008; Pope & Sydnor, 2008
2009	15	Larrimore et al., 2009; Meyer, 2009; Lin, Prabhala & Viswanathan, 2009b; Livingston & Glassman, 2009; Martinho, 2009; Herrero-Lopez, 2009; Galloway, 2009; Chemin & De Laat, 2009; Ashta & Assadi, 2009; Lin, 2009; M. E. Greiner & Wang, 2009; Iyer et al., 2009; Barasinska, 2009; Lin, Prabhala & Viswanathan, 2009a; Berger & Gleisner, 2009
2010	8	Hildebrand et al., 2010; Hartley, 2010; Böhme & Pötzsch, 2010; Herzenstein et al., 2010; Collier & R. Hampshire, 2010; Freedman & Ginger Zhe Jin, 2010; Everett, 2010; Mcintosh, 2010

THE P2P LENDING MARKET

The concept of private loans is not a new business model and rather the traditional way for private persons to borrow money without any mediation (Everett, 2010; Herrero-Lopez, 2009). What makes online P2P lending a young phenomenon is the transfer into the internet using online P2P lending platforms.

Platforms

In 2005 the first lending platform Zopa was established in Europe (UK). Since then various forms of lending platforms followed (Frerichs & Schumann, 2008). Garman et al. (2008) identify 24 platforms existing worldwide, with twelve platforms in the U.S. alone while the weblog P2P-Banking.com names 33 different platforms worldwide in 2010.

The first lending platform in the United States was launched in February 2006 (prosper.com). Smava (smava.de), the first German P2P lending company, was founded in February 2007. Today most of the existing platforms work on a national level, due to different legal requirements in different countries (Berger & Gleisner, 2009). The following table shows the ten largest lending companies relating to the total volume of loans created.

Table 2: Loan volume of P2P lending companies. Source: P2P-Banking.com (Oct 23, 2010)

Position	Company	Country	Vol. (millions) in US$
1.	Virginmoney	USA	390.0
2.	Prosper	USA	178.0
3.	Kiva	USA	57.9
4.	Zopa UK	UK	45.6
5.	Lending Club	USA	26.9
6.	MyC4	DK	9.0
7.	Smava	DE	8.6
8.	Moneyauction	JP	7.8
9.	Zopa IT	IT	5.9
10.	Boober	NL	3.3

Online P2P lending platforms differ in type and the approach adopted. They can basically be divided into two types: commercial and non-commercial (Ashta & Assadi, 2009). While commercial platforms in general are limited to national markets, non-commercial platforms often operate globally. The main difference between the two platform types is the lender's general intention and his expectations concerning returns. A lender who engages in commercial platforms gets a reasonable interest for the risk he is taking. In non-commercial platforms lenders get no or little reward for the risks they are willing to take. Here lenders rather want to "donate" small loans to projects in economically underdeveloped regions in the world.

Stakeholders

Structuring the different groups and individuals that are part of the lending process according to Freeman's stakeholder approach (Freeman, 2010) helps to identify gaps in existing research. To define the term "stakeholder" we follow Freeman's general statement that "a stakeholder of an organization is (by definition) any group or individual who can affect or is affected by the achievement of the organization's objectives".
Since we could not find research contributions that focused on the internal stakeholders of P2P lending platforms, like management, employees and owners, the following paragraphs will focus on external stakeholders of commercial lending platforms (excluding Micro-Finance Institutions that are in most cases only relevant for non-commercial platforms).

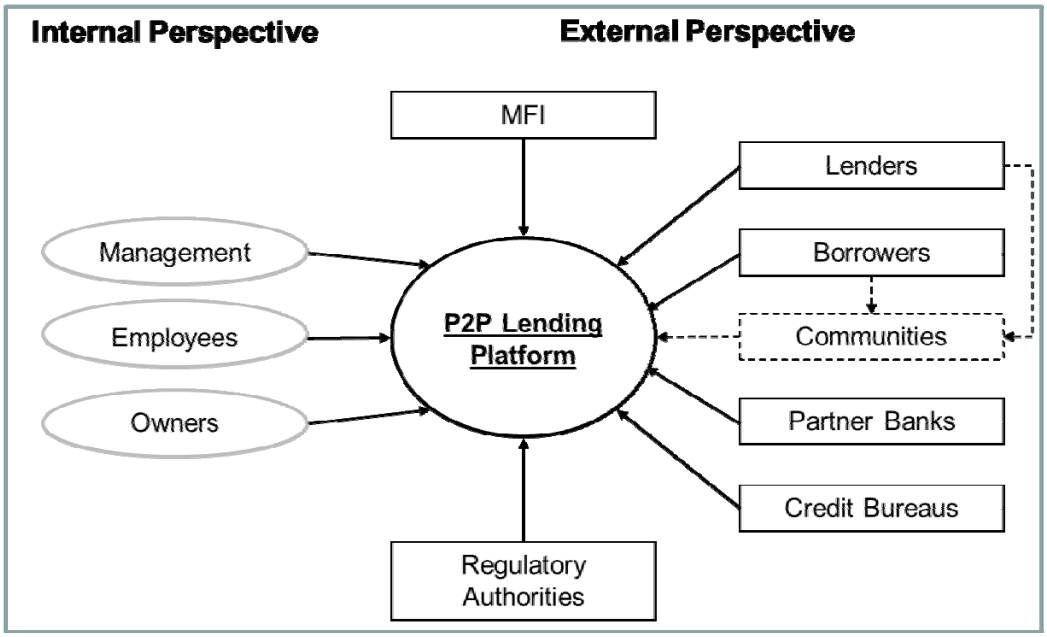
Lenders, Borrowers and Communities

Online P2P lending is a two sided market that does not differ much from the traditional banking system with its typical challenges (Klafft, 2008). Lenders and borrowers are the main target groups of all platform activities. Therefore most of the research has focused on these stakeholders and also on the determinants that are essential for the success of the lending process (Freedman & G.Z. Jin, 2008; Iyer et al., 2009). While lenders seek opportunities to invest money as profitable as possible at a given level of risk, borrowers with different default risks look for sources of liquidity. P2P websites act as intermediaries and bring these groups together. They try to match the expectations of both parties. Lenders or borrowers sometimes engage in groups and form small communities to concentrate their interests (M. E. Greiner & Wang, 2009; Herrero-Lopez, 2009).

Regulatory Authorities, Partner Banks, Credit Bureaus

Being a (small) part of the financial market involves different regulatory restrictions in different countries. Depending on national regulations, having original banks as partners in operative business is mostly a requirement. Several articles mention the necessity of bank involvement (Galloway, 2009) but mainly to facilitate the process of lending. This process also includes the confirmation of the borrower's data by credit bureaus or other external monitoring agencies. These systems of confirmation and identification also vary from country to country, causing research in this area to be not globally applicable.

Figure 1: External and internal stakeholders in P2P lending



Lending process

Some platforms connect lenders and borrowers directly while others connect them via a third instance (usually a bank). Online P2P lending platforms differ in the way the borrower's interest rate is set. Sites, like prosper.com use an auction process (Galloway, 2009) where borrowers are able to set a maximum interest rate they are willing to pay. For a limited amount of time (at prosper the auction lasts 14 days) lenders can then place their bids by naming the amount of money they are willing to fund and the minimum interest rate they are willing to accept. Even after the loan has been fully funded, lenders can still place their bids and undercut other lenders by offering funding for lower minimum interest rates. In this case, where more bids have been placed than needed to fund the loan, those bids with the lowest minimum interest rates are selected. All lenders then receive the interest rate of the highest bid that has been included into the loan for their investments, even if the minimum interest rates of their bids have been smaller.

Other sites, like the German platform smava.de, calculate the interest rates for a loan request, based on the borrowers' characteristics (financial and demographic). The bidding process ends after the loan has been fully funded, since further bids would not

have an effect on the resulting interest rate (Collier & R. Hampshire, 2010).

If the lending process leads to a fully funded loan-request, some platforms like prosper.com have implemented another verification of the borrower's ability to pay, including the verification of a steady income. The loan is then granted to the borrower, who will eventually start the repayment process (S. Garman, R. Hampshire, et al., 2008).

The intermediating online P2P lending platforms generate their revenue via service fees, which they collect from borrowers as well as lenders (Klafft, 2008). Many collect a closing fee of a certain percentage of the funded loan from the borrowers, as well as fees for late or failed payments. Lenders often have to pay a servicing fee based on the amount they have funded to borrowers.

DETERMINANTS IN P2P-LENDING

Information asymmetry is the fundamental problem in online P2P lending. The challenge is to overcome the principal-agent problem (Jensen & Meckling, 1976). While the lender wants to get as much valid information about the borrower as possible, the borrower might be interested in hiding some of his characteristics in order to get an interest rate as low as possible. In order to allow lenders to make an informed decision based on valid information, P2P lending platforms force their borrowers to provide financial information that have been validated by external agencies. Additionally, many platforms demand users to supply demographic information, like gender, race or age. Borrowers are also often given the opportunity to provide social information, which cannot be validated, like hobbies, the family background or a photo. We call these characteristics determinants of P2P lending, since they have major influence on the successful funding of a borrower's loan-listing and the demanded interest-rate.

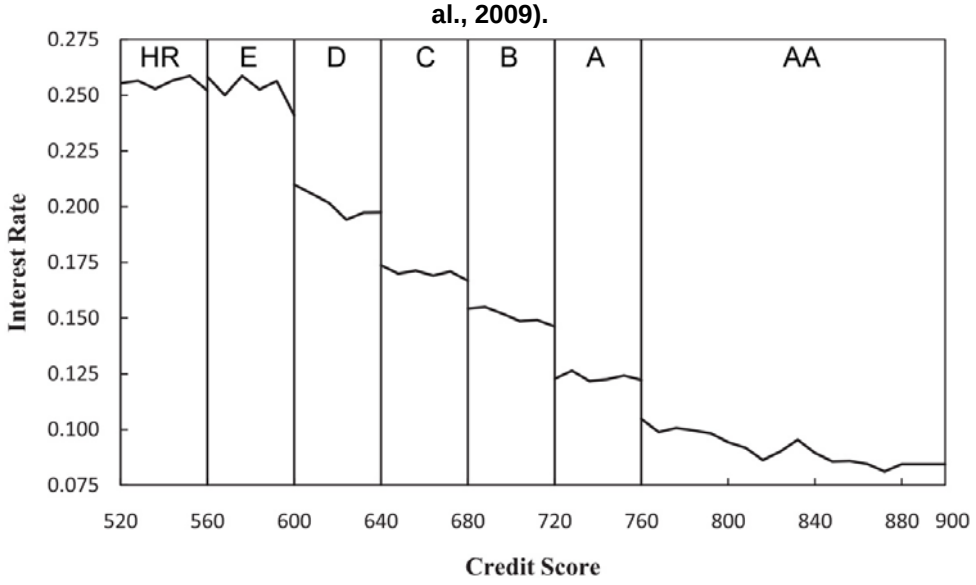
Financial determinants

Most P2P lending platforms provide an overview of the financial characteristics of the borrower to the lender as the main indicator for creditworthiness. Typical financial characteristics are credit ratings, detailed information on income and monthly expenses, house-ownership or the debt to income ratio. They are often determined by external rating agencies that aggregate personal and financial characteristics to a credit-score. Some platforms like prosper.com provide additional financial information about their borrowers like current open credit lines or bankcard utilization (Klafft, 2008).

Iyer et al. (2009) investigate in particular the influence of the borrower's credit rating on funding success. They raise the question, whether lenders are able to infer the creditworthiness of borrowers from other characteristics, besides the credit rating, as well. They found that 28 percent of the interest spread between the most creditworthy credit rating category (AA) and the least creditworthy borrowers, rated HR, is explained by other characteristics than the credit rating itself (**Figure 2**). They show that lenders can rightly differentiate between borrowers with different credit-scores within the same credit rating category by screening other characteristics of the borrowers given in the loan-

listing.[1] According to the authors the lenders infer the borrower's creditworthiness within the credit-rating categories mainly from other standard-banking variables like the dept-to-income ratio, the number of current delinquencies or the number of credit inquiries. Non-standard variables have a smaller impact on the interest spread. The influence of information like the maximum interest rate the borrower is willing to pay might still be significant however.

Figure 2: Interest rates between and within credit-rating categories on Prosper.com (Iyer et al., 2009).



Klafft (2008) confirms that the rules that apply in P2P lending are very similar to those of the traditional banking system. His analysis of data retrieved from the Prosper platform show that the borrower's credit rating has the most impact on the interest rate of the loan, while the dept-to-income ratio of the borrower has a much smaller, but still significant influence. Additional information like a verified borrower's bank account or verified home ownership has almost no impact on interest-rates. The analysis shows however that the existence of a borrower's bank account is the most powerful determining variable when it comes to the successful funding of the loan. This is surprising, because the borrower's credit rating, which is only the second most influential variable in this category, is much more sophisticated and in fact includes the borrower's bank account information.

Klafft (2008) points out, that borrowers with weak credit-ratings, who cannot get funding in the traditional banking-system, are unlikely to do so via P2P lending. His analysis shows that borrowers with a credit-rating of HR make up 57.4 percent of all loan-listings on prosper.com. Only 5.5 percent of these listings get successfully funded compared to 54 percent of loan-listings by AA-borrowers.

[1] As an example: According to the presented data of Iyer et al. (2009), a D-rated borrower with the credit-score of 600 has to pay higher average interest rates than a D-rated borrower with a credit-score of 635. Since the loan listing does not display the credit-score of the borrower, but only his credit rating category, the lenders must use other characteristics of the borrower to screen his or her creditworthiness.

Freedman & Jin (2008) reveal in their study that the average funding rate on prosper.com rose from 8.51% in the time-period 11/2005 to 03/2007 to 10.14% between 06/2006 and 07/2008. They assume that the higher funding rate is a result of the improved information that prosper.com provides to its lenders (on February 12, 2007, prosper.com added more detailed financial information about the borrower and the possibility that borrowers report their current income, employment-status and occupation).

Demographic characteristics

Demographic characteristics encompass gender, race and age. The literature investigates correlations between these characteristics and future loan performance, but also explores questions of discrimination.

General

Research shows that discrimination based on demographic characteristics other than race have only little impact on the likelihood of funding and interest rates (Herzenstein et al., 2008; Pope & Sydnor, 2008; Ravina, 2007).

Ravina (2007) analyzes the role of similarity between lenders and borrowers. The results show that resemblance has a strong positive impact on the lenders' decision. Living in the same city as the lender, belonging to the same ethnicity or gender all increase the likelihood of getting a loan request funded.

Pope & Sydnor (2008) try to establish two different kinds of discrimination – taste-based and statistical discrimination. An example for taste-based discrimination is the subjective propensity of a lender in favor or against a group of people like male or female. Statistical discrimination occurs for example when lenders offer higher interest rates to a minority (e.g. old people) caused by the fact that this minority has a statistically proved higher default rate than other borrowers (Phelps, 1972).

Race

The borrower's race can be an important determinant in P2P lending. Pope & Sydnor (2008) show that the chances of African American loan listings to get fully funded are 25 to 34 percent smaller than those of whites with similar credit ratings. These findings are confirmed by Herzenstein et al. (2008) who present that African Americans have a smaller chance of getting funded than other races. They raise the question, if these differences are caused in part by the fact that African American borrowers, on average, set a lower maximum interest rate they are willing to receive funding for, than other races. Research shows, that smaller maximum interest rates reduce chances that lenders are bidding on the loan-listing (Herzenstein et al., 2008). Ravina (2007) contradicts these findings, by claiming that race, gender and age do not have a significant effect on the likelihood of getting a loan. She argues that racial discrimination is displayed mainly in the interest rates that borrowers have to pay in order to get a loan. African Americans have to pay between 1.39 and 1.46 percent higher interests than similar white borrowers according to her study. The findings of Pope & Sydnor (2008) show that interest rates of African American loan listings are 0.6 and 0.8 percent above those of white loan listings. However, the estimated net return of African American loan listings is significantly worse compared to those of whites. Therefore the increased

interest rates for African American are not sufficient to compensate for their higher probability of default. The authors argue that these findings are "consistent with a combination of accurate statistical discrimination against blacks coupled with taste-based discrimination against whites" (Pope & Sydnor, 2008, p. 4).

Age

Pope & Sydnor (2008) analyze the effects of the borrowers' age on funding success. Compared to a base group of 35-60 year olds, there is a 40 to 90 basis points higher chance of getting funded for those who appear younger than 35. Those who appear to be 60 years and older are between 1.1 and 2.3 percentage points less likely to succeed in acquiring a loan.

Gender

Empirical research by Pope & Sydnor (2008) finds that single women pay 0.4 percent less interests than men even though the estimated return on loans to single women is approximately 2 percentage points less than for single men.

Barasinska (2009) investigates the question if the lenders' gender is relevant for ex-ante return and risk characteristics of the loan. To her surprise, she finds that female lenders are less risk-averse than male lenders. The probability that female lenders are funding a loan increases with lower interest rates and lower credit ratings of the borrower. Barasinska's interpretation of these results is that women are possibly driven by altruistic motives and are willing to lend money at lower interest rates than males.

Barasinska also outlines a new field of study, which she leaves to future research, concerning the question whether loans granted by female lenders perform differently than those granted by males.

Social capital and soft factors

Besides demographic factors like age, gender and race there are other soft factors that influence the process of lending which are less measurable. These soft factors can be friends, groups or even the added picture.

Nahapiet & Ghoshal (1998) identify three main dimensions of social capital, namely structural, relational, and cognitive. The structural dimension describes whether and how people or entities are connected. Important aspects of the structural dimension are the presence or absence of network ties between people, network configuration (e.g., centralization or density), and appropriability (e.g., transferability of social capital to other contexts). The relational dimension of social capital describes the set of personal relationships that people have developed through interactions. It focuses on the quality of relations such as respect and friendship between people. Important aspects are trust and trustworthiness, norms and sanctions, obligations and expectations, as well as identity and identification. The cognitive dimension relates to resources providing shared representation, interpretations, and systems of meanings. Important aspects are shared languages shared narratives that enable individuals within a network to have similar interpretations of events.

Petersen (2004) describes soft information as "difficult to completely summarize in a numeric score" in contrast to hard factors like financial data of a borrower. Lin (2009)

defines “soft credit information” as the information about borrowers’ riskiness generated by his or her social network in the P2P lending community.

General Findings

Social capital can have a positive influence on getting a fully funded loan, can reduce the interest rate a borrower is likely to obtain, and has an increasing influence with lower credit-ratings (M. E. Greiner & Wang, 2009). According to Herrero-Lopez (2009) fostering social features increases the chances of getting a loan fully funded when financial features are not enough to construct a successful loan request. However, social capital is apparently not a good predictor of loan payment and does not necessarily help lenders in making better investment decisions (M. E. Greiner & Wang, 2009).

Friends

“Friends” are virtually connected people in P2P lending platforms. They represent a one-to-one link from a member to other borrowers or lenders. This relationship is usually based on family, friendship or previous transactions. This connection is made public and intends to motivate lenders within the borrower’s second or higher degree social network[2] to bid based on indirect trust (Herrero-Lopez, 2009). Freedman & Jin (2008) find that loans with endorsements and bids of friends have less late payments and significantly higher rates of returns. They conclude that the borrowers’ friends are better equipped to identify risks and trustworthiness because of the additional information they posses due to their personal relationship. Furthermore they argue that monitoring within social networks provides a stronger incentive for loan-payment.

Photos

The research of Klafft (2008) points out that interest rates for listings with and without photos were almost the same. He argues that photos primarily affect the likelihood of loan funding but play a minor role in interest rate determination.
In contrast to that the studies of Ravina (2007) show that beautiful borrowers are 1.41 percent more likely to get a loan and pay 81 basis points fewer interests than an average-looking borrower with the same credentials. This finding is underlined by Pope & Sydnor (2008) who identified that the Prosper market responds negatively to listings that do not include a picture at all or people who appear rather unhappy.

Groups and group intermediation

At most P2P-Lending platforms members are allowed to form special communities. Groups might clear some information hurdles if the group is designed with the correct incentives (Freedman & G.Z. Jin, 2008). For example being member of trusted groups at prosper doubles the probability of getting a loan request fully funded (Herrero-Lopez, 2009). The membership in a trusted group does not guarantee a fully funded loan, however. A reasonable offer is still needed.

Berger (2009) and Greiner & Wang (2009) found that the mere membership in a group significantly reduces the interest rate of the funded loan. Greiner & Wang (2009), with the support of Klein (2008) show that borrowers that are member of a group show

[2] The second degree social network of a member consists of friends of the member’s friends.

slightly higher loan payments and smaller default rates than borrowers outside of a group. These findings are aligned with Greiner & Wang (2009), Herrero-Lopez (2009) and Freedman & Jin (2008) who claim that social loans are more likely to be funded than the listings that have no group affiliation or friend ties.

The role of the group leader is discussed controversially in the literature. While the sole endorsement of a loan listing by a group leader can increase the likelihood of being funded (Kumar, 2007), it will not affect the interest rate of the loan by itself (Berger & Gleisner, 2009). Research shows that only the active bidding of the group leader and other members can decrease the interest rate of the loan (Berger & Gleisner, 2009; Collier & R. Hampshire, 2010). Freedman & Jin (2008) disagree with these findings, showing that the combination of a group leader's endorsement and a group leader's bidding will actually increase the average interest rate, implying that a group leader's bid is actually perceived as a negative signal. They present evidence that some of the negative signaling effect of group affiliation and a group leader's bid is due to the perverse incentives of group leader rewards. Until the fourth quarter of 2007 Prosper was paying 12 dollars to group leaders for each successfully funded loan within their group. In studies using data from 2008 or younger, this negative signaling effect has not been mentioned anymore.

Research studies consistently show that the group leader's bidding is not correlated with the default rate of the loans they bid on (Berger & Gleisner, 2009; Klein, 2008; Kumar, 2007). This indicates that the positive signaling effect of their bidding and the induced lowering of the interest rates by the lenders might not be appropriate.

Surprisingly the group rating, which is generated by Prosper based on the group's performance compared to average default rates of the past, has little or no effect on interest rates (Berger & Gleisner, 2009; Collier & R. Hampshire, 2010). Berger & Gleisner (2009) as well as Collier & Hampshire (2010) show that bigger groups result in lower interest rates. Although both studies show only weak correlations, the authors explain the findings with a better peer-review in larger groups. The data of Freedman & Jin (2008) contradict these findings. They argue that the larger the group size, the higher the interest rate and the lower the rate of return for the lender. Again they make the case that the incentives set by Prosper until late 2007 might have lead the fact the group leaders artificially tried to increase their group size without diligent screening.

According to Freedman & Jin (2008) and Greiner & Wang (2009) the ratio of lenders to borrowers within a group has a much greater effect on the interest rate than group size. The greater the proportion of lenders the lower is the interest rate.

If the review of the borrower's personal information is mandatory before group membership is granted, the interest rate of the borrower's loan listings will ceteris paribus be smaller (Berger & Gleisner, 2009; Collier & R. Hampshire, 2010; M. E. Greiner & Wang, 2009). The impact of the mandatory review is most significant for borrowers with low credit grades, in particular D, E and HR (Berger & Gleisner, 2009). These borrower segments are the ones who are most likely to be organized in groups (Freedman & G.Z. Jin, 2008), since they profit the most from the social capital coming from group affiliation (Collier & R. Hampshire, 2010). Interestingly, Klein (2008) showed that group leaders do not select those borrowers with the better characteristics into their

groups, as one would expect. He explains this irrational behavior with the short term incentives, which Prosper provided until late 2007.

CONCLUSION AND IMPLICATION FOR FUTURE RESEARCH

Online P2P lending has gained scientific relevance over the past years. The availability of data about markets and transactions allows researchers from different disciplines to investigate the various determinants that play a role in the process of funding. Much of the research that has been part of this literature review focused on variables that influence funding success and interest rates of loan request. Although this field does offer further research potential and insights for social science in general, we see a set of additional aspects that are worth being investigated in more detail in the future.

As we identified in 0 especially external stakeholders do play an important role in interaction with lending websites. Yet, the internal perspective deserves further investigation in the literature. In this respect for example an examination of business models, organizational design, and those factors that generate success of P2P platforms is a promising research topic.

There is also the aspect of lender-performance. We identified a lack of research contributions that focus on variables that determine the success of lenders concerning return on investment and low default rates.

Furthermore, the influence of the borrowers' loan descriptions on funding success deserves further investigation. While several papers investigated the effects of individual text characteristics (M. Greiner & Wang, 2007; Larrimore et al., 2009; Lin, 2009), little research has been done concerning the meeting of lenders' expectations; the general tone of the description, and the reduction of information asymmetries.

Finally, further examinations are necessary to identify similarities and differences between the traditional banking and the P2P lending market. Both markets differ very much in the average size of the funded loan, the screening process, as well as the knowledge and resources to evaluate and manage risks. That kind of research might clarify whether results from former research in the traditional banking market are applicable to the P2P lending market and vice versa.

REFERENCES

Ashta, A., & Assadi, D. (2009). An Analysis of European Online micro-lending Websites. *EMN 6th Annual Conference* (Vol. 33, pp. 4-28). Milan: Fundación Nantik Lum. Retrieved from http://www.european-microfinance.org/data/file/microlending-websites.doc

Barasinska, N. (2009). The Role of Gender in Lending Business : Evidence from an Online Market for Peer-to-Peer Lending. *The New York Times*. Berlin.

Berger, S. C., & Gleisner, F. (2009). Emergence of Financial Intermediaries in Electronic Markets : The Case of Online P2P Lending. *BuR - Business Research, Official Open Access Journal of VHB*, *2*(1), 39-65.

Böhme, R., & Pötzsch, S. (2010). Privacy in online social lending. *AAAI 2010 Spring Symposium on Intelligent Privacy Management* (pp. 23–28). Palo Alto: Stanford University. Retrieved from http://www.aaai.org/ocs/index.php/SSS/SSS10/paper/viewPDFInterstitial/1048/1472

Chemin, M., & De Laat, J. (2009). Can Warm Glow Alleviate Credit Market Failure? Evidence from Online Peer-to-Peer Lenders. *papers.ssrn.com*. Montreal. Retrieved from http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1461438

Chen, K. Y., Golder, S., Hogg, T., & Zenteno, C. (2008). How Do People Respond to Reputation: Ostracize, Price Discriminate or Punish? *2nd Intl. Workshop on Hot Topics in Web Systems and Technologies* (p. 6). Palo Alto, CA: Hewlett-Packard Labs. Retrieved from http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.157.9701&rep=rep1&type=pdf

Collier, B., & Hampshire, R. (2010). Sending Mixed Signals: Multilevel Reputation Effects in Peer-to-Peer Lending Markets. *ACM Conference on Computer Supported Cooperative Work* (pp. 1-10). Savannah, Georgia: ACM.

Dhand, H., Mehn, G., Dickens, D., Patel, A., Lakra, D., & McGrath, A. (2008). Internet Based Social Lending. *Communications of the IBIMA*, *2*, 109-114. Retrieved from http://www.doaj.org/doaj?func=abstract&id=564232

Everett, C. R. (2010). Group membership , relationship banking and loan default risk : the case of online social lending. *Group*. West Lafayette, IN. Retrieved from Available at SSRN: http://ssrn.com/abstract=1114428

Freedman, S., & Jin, G.Z. (2008). Do Social Networks Solve Information Problems for Peer-to-Peer Lending? Evidence from Prosper. com. *Working Papers*. College Park, MD: NET Institute. Retrieved from http://en.ccer.edu.cn/download/6641-1.pdf

Freedman, S., & Jin, G. Z. v. (2008). Dynamic Learning and Selection: the Early Years of Prosper. com. *com. working paper*. College Park, MD. Retrieved from http://www.prosper.com/downloads/research/Dynamic-Learning-Selection-062008.pdf

Freedman, S., & Jin, Ginger Zhe. (2010). Learning by Doing with Asymmetric Information : Evidence from Prosper.com. College Park, MD. Retrieved from http://kuafu.umd.edu/~ginger/research/Freedman-Jin-Feb2010.pdf

Freeman, R. E. (2010). *Strategic management: A stakeholder approach* (p. 276). Boston: Cambrigde University Press.

Frerichs, A., & Schumann, M. (2008). Peer to Peer Banking – State of the Art. Göttingen.

Galloway, I. (2009). Peer-to-Peer Lending and Community Development Finance. *Community Development Investment Center Working Paper*. San Francisco: Federal Reserve Bank of San Francisco. Retrieved from http://ideas.repec.org/p/fip/fedfcw/2009-06.html

Garman, S. R., Hampshire, R. C., & Krishnan, R. (2008). Person-to-Person Lending : The Pursuit of (More) Competitive Credit Markets. *Twenty Ninth International Conference on Information Systems* (p. 17). Paris: Association for Information Systems.

Garman, S., Hampshire, R., & Krishnan, R. (2008). A Search Theoretic Model of Person-to-Person Lending. May. Retrieved from http://www.heinz.cmu.edu/research/244full.pdf

Greiner, M. E., & Wang, H. (2009). The Role of Social Capital in People-to-People Lending Marketplaces. *Thirtieth International Conference on Information Systems* (p. 18). Phoenix: Association for Information Systems.

Greiner, M., & Wang, H. (2007). Building Consumer-to-Consumer Trust in e-Finance Marketplaces. *13th Americas Conference of Information Systems* (Vol. 211, p. 11). Keystone, Colorado: Association for Information Systems. Retrieved from http://aisel.aisnet.org/cgi/viewcontent.cgi?article=1721&context=amcis2007

Hartley, S. E. (2010). Kiva.org: Crowd-Sourced Microfinance and Cooperation in Group Lending. *Group*. Stanford, CA ; New York, NY.

Heng, S., Meyer, T., & Stobbe, A. (2007). *Implications of Web 2.0 for financial institutions: Be a driver, not a passenger* (Vol. 2007, p. 11). Frankfurt. Retrieved from http://mpra.ub.uni-muenchen.de/4316

Herrero-Lopez, S. (2009). Social Interactions in P2P Lending. *Proceedings of the 3rd Workshop on Social Network Mining and Analysis* (pp. 1–8). Paris: ACM. Retrieved from http://portal.acm.org/citation.cfm?id=1731011.1731014

Herrero-Lopez, S., Sheng-Ying Pao, A., & Bhattacharyya, R. (2008). The Effect of Social Interactions on P2P Lending. Boston, MA. Retrieved from http://courses.media.mit.edu/2008fall/mas622j/Projects/SergioAithneRahul/SocialInteractionsInP2PLending.pdf

Herzenstein, M., Andrews, R. L., Dholakia, U. M., & Lyandres, E. (2008). The Democratization Of Personal Consumer Loans? Determinants Of Success In Online Peer-To-Peer Lending Communities. *Online*. Newark, DE ; Houston, TX.

Retrieved from http://www.prosper.com/downloads/research/democratization-consumer-loans.pdf

Herzenstein, M., Dholakia, U. M., & Andrews, R. L. (2010). Strategic Herding Behavior in Peer-to-Peer Loan Auctions. Newark DE ; Houston, TX.

Hildebrand, T., Puri, M., & Rocholl, J. (2010). Skin in the Game : Evidence from the Online Social Lending Market. *Group*, (October). Retrieved from http://www.rhsmith.umd.edu/feaconference/docs/Session3PuriSkinintheGame.pdf

Hulme, M. K., & Wright, C. (2006). Internet Based Social Lending: Past, Present and Future. *Social Futures Observatory*, (October). Citeseer. Retrieved from http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.130.3274&rep=rep1&type=pdf

Iyer, R., Khwaja, A. I., Luttmer, E. F. P., & Shue, K. (2009). Screening in New Credit Markets Can Individual Lenders Infer Borrower Creditworthiness in Peer-to-Peer Lending? *Management*. Cambridge, MA.

Jensen, M. C., & Meckling, W. H. (1976). Theory of the Firm : Managerial Behavior , Agency Costs and Ownership Structure. *Journal of Financial Economics*, *3*(4), 305-360. Retrieved from http://tolstenko.net/blog/dados/Unicamp/2010.2/ce738/03_SSRN-id94043.pdf

Klafft, M. (2008). Peer to Peer Lending: Auctioning Microcredits over the Internet. *Proceedings of the 2008 Int'l Conference on Information Systems, Technology and Management* (pp. 1-8). Dubai: IMT. Retrieved from http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1352383

Klein, T. (2008). *Performance in Online Lending Platforms*. *Online*. Friedrich-Schiller-Universität Jena.

Kumar, S. (2007). Bank of One. Empirical Analysis of Peer-to-Peer Financial Marketplace. *13th Americas Conference on Information Systems* (p. 9). Keystone, Colorado: Association for Information Systems. Retrieved from http://aisel.aisnet.org/cgi/viewcontent.cgi?article=1815&context=amcis2007

Larrimore, L., Jiang, L., Gorski, S., Markowitz, D., Zhao, J., & Canlas, K. (2009). Making an Offer They Can't Refuse: How Borrower Language in Peer-to-Peer Lending Impacts Funding (TOP 3 Student Paper). Chicago, IL. Retrieved from http://www.allacademic.com/meta/p_mla_apa_research_citation/2/9/9/4/4/p299440_index.html

Lin, M. (2009). Peer-to-Peer Lending : An Empirical Study. *15th Americas Conference on Information Systems* (p. 8). San Francisco: Association for Information Systems.

Lin, M., Prabhala, N. R., & Viswanathan, S. (2009a). Social Networks as Signaling Mechanisms: Evidence from Online Peer-to-Peer Lending. *pages.stern.nyu.edu*. College Park. Retrieved from http://pages.stern.nyu.edu/~bakos/wise/papers/wise2009-p09_paper.pdf

Lin, M., Prabhala, N. R., & Viswanathan, S. (2009b). Judging borrowers by the company they keep: social networks and adverse selection in online peer-to-peer lending. *papers.ssrn.com*. College Park. Retrieved from http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1355679

Livingston, L., & Glassman, T. (2009). Creating a new type of student managed fund using peer-to-peer loans. *Business Education & Accreditation*, *1*(1), 1-14. Retrieved from http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1555109

Martinho, L. (2009). *Combining Loan Requests and Investment Offers in Peer-To-Peer Lending*. *Workshop on Intelligent Agents and Technologies for e-Business (IAT4EB)*. Universidade do Porto.

Mcintosh, C. (2010). Monitoring Repayment in Online Peer-to-Peer Lending. San Diego.

Meyer, T. (2007). *The power of people: Online P2P lending nibbles at banks' loan business*. *Online* (p. 69). Frankfurt.

Meyer, T. (2009). *Welcome to the machine*. *E-Banking Snapshot* (Vol. 31). Frankfurt. Retrieved from http://www.dbresearch.de/PROD/DBR_INTERNET_EN-PROD/PROD0000000000249961.pdf

Nahapiet, J., & Ghoshal, S. (1998). Social capital, intellectual capital, and the organizational advantage. *Academy of management review*, *23*(2), 242–266. Academy of Management. Retrieved from http://www.jstor.org/stable/259373

Petersen, M. A. (2004). Information: Hard and soft. *Northwestern University, Chicago IL*. Evanston, IL: Citeseer. Retrieved from http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.126.8246&rep=rep1&type=pdf

Phelps, E. S. (1972). The Statistical Theory of Racism and Sexism. *American Economic Review*, *62*(4), 659-661.

Pope, D. G., & Sydnor, J. R. (2008). What's in a Picture? Evidence of Discrimination from Prosper. com. *Journal of Human Resources*. Philadelphia, PA. Retrieved from http://scholar.google.com/scholar?hl=en&btnG=Search&q=intitle:What?s+in+a+Picture?+Evidence+of+Discrimination+from+Prosper#0

Ravina, E. (2007). Beauty, Personal Characteristics, and Trust in Credit Markets. *papers.ssrn.com*. New York, NY. Retrieved from http://papers.ssrn.com/sol3/papers.cfm?abstract_id=972801

Rumiany, D. (2007). Internet Bidding for Microcredit: making it work in the developed world, conceiving it for the developing world. *Development Gateway, March*. Retrieved from http://topics.developmentgateway.org/uploads/media/ict/Internet Bidding for Microcredit.pdf

Theseira, W. (2008). Competition to Default? Racial Discrimination in the Market for Online Peer-to-Peer Lending. Philadelphia, PA.

Webster, J., & Watson, R. T. (2002). Analyzing the past to prepare for the future: Writing a literature review. *MIS Quarterly*, *26*(2), 13–23. Citeseer. Retrieved from http://citeseerx.ist.psu.edu/viewdoc/summary?doi=10.1.1.104.6570